

AMENDMENT TO CLAIMS

Claim 1. (Cancelled)

Claim 2. (Previously presented) A combination bovine rotavirus and coronavirus vaccine capable of inducing immunity in bovine animals without serious side effects, the combination vaccine comprising a vaccinal amount of a plurality of inactivated bovine rotavirus strains, at least one inactivated bovine coronavirus strain, and at least one vaccinal bacteria.

Claim 3-4. (Cancelled)

Claim 5. (Currently amended) The combination vaccine of claim 2, wherein said rotavirus strains comprise Cody 81-4 having ATCC accession number PTA-5955, G type10 B223 having ATCC accession number PTA-5956 and B641 having ATCC accession number PTA-5957 and the coronavirus strain comprises the Mebus strain having ATCC accession no. VR-874.

Claim 6. (Original) The combination vaccine of claim 2, wherein said vaccinal bacteria comprise a vaccinal amount of a plurality of *Escherichia coli* bacterin strains and at least one *Clostridium perfringens* Type C bacterin strain.

Claim 7. (Cancelled)

Claim 8. (Previously presented) The combination vaccine of claim 5, wherein said vaccinal bacteria comprise a vaccinal amount of a plurality of *Escherichia coli* bacterin strains and at least one *Clostridium perfringens* Type C bacterin strain.

Claim 9. (Previously presented) The combination vaccine of claim 6, wherein said *Escherichia coli* bacterin strains comprise B41 having ATCC accession number PTA-5951, B42 having ATCC accession number PTA-5952, B44 having ATCC accession number PTA-5954, and B117 having ATCC accession number PTA-5953.

Claim 10. (Previously presented) The combination vaccine of claim 8, wherein said *Escherichia coli* bacterin strains comprise B41 having ATCC accession number PTA-5951, B42 having ATCC accession number PTA-5952, B44 having ATCC accession number PTA-5954, and B117 having ATCC accession number PTA-5953.

Claim 11. (Previously presented) The combination vaccine of claim 6, wherein said *Clostridium perfringens* bacterin strain comprises GL47 having ATCC accession no. PTA-3000.

Claim 12. (Previously presented) The combination vaccine of claim 8, wherein said *Clostridium perfringens* bacterin strain comprises GL47 having ATCC accession no. PTA-3000.

Claim 13. (Previously presented) The combination vaccine of claim 6, wherein said *Escherichia coli* bacterin strains comprise B41 having ATCC accession number PTA-5951, B42 having ATCC accession number PTA-5952, B44 having ATCC accession number PTA-5954, and B117 having ATCC accession number PTA-5953 and said *Clostridium perfringens* bacterin strain comprises GL47 having ATCC accession no. PTA-3000.

Claim 14. (Previously presented) The combination vaccine of claim 8, wherein said *Escherichia coli* bacterin strains comprise B41 having ATCC accession number PTA-5951, B42 having ATCC accession number PTA-5952, B44 having ATCC accession number PTA-5954, and B117 having ATCC accession number PTA-5953 and said *Clostridium perfringens* bacterin strain comprises GL47 having ATCC accession no. PTA-3000.

Claims 15-21. (Cancelled)

Claim 22. (Previously presented) A method of vaccinating bovine animals comprising administering parenterally to said animals the combination vaccine of claim 2, 5, 6, 8, 13, or 14.

Claim 23. (Original) The method of claim 22, wherein the vaccine is administered by intramuscular injection.

Claim 24. (Original) The method of claim 22, wherein the vaccine is administered by subcutaneous injection.

Claim 25. (Previously presented) A method of vaccinating bovine animals comprising administering parenterally to said animals a combination bovine rotavirus and bovine coronavirus vaccine capable of inducing immunity in bovine animals without serious side effect, the combination vaccine comprising a vaccinal amount of a plurality of inactivated bovine rotavirus strains, at least one inactivated bovine coronavirus strain, and at least one vaccinal bacteria.

Claim 26. (Cancelled)

Claim 27. (Previously presented) The method of claim 25, wherein said vaccinal bacteria comprise a vaccinal amount of a plurality of *Escherichia coli* bacterin strains and at least one *Clostridium perfringens* Type C bacterin strain.

Claim 28-29. (Cancelled)

Claim 30. (Currently amended) The method of claim 25, wherein said rotavirus strains comprise Cody 81-4 having ATCC accession number PTA-5955, G type 10B223 having ATCC accession number PTA-5956 and B641 having ATCC accession number PTA-5957.

Claim 31. (Original) The method of claim 25, wherein the coronavirus strain comprises the Mebus strain having ATCC accession no. VR-874.

Claim 32. (Currently amended) The method of claim 25, wherein the rotavirus strains comprise Cody 81-4 having ATCC accession number PTA-5955, G type 10B223 having ATCC accession number PTA-5956 and B641 having ATCC accession number PTA-5957 and the coronavirus strain comprises the Mebus strain having ATCC accession no. VR-874.

Claim 33. (Previously presented) The method of claim 27, wherein the *Escherichia coli* bacterin strains comprise B41 having ATCC accession number PTA-5951, B42 having ATCC accession number PTA-5952, B44 having ATCC accession number PTA-5954, and B117 having ATCC accession number PTA-5953.

Claim 34. (Previously presented) The method of claim 27, wherein the *Clostridium perfringens* bacterin strain comprises GL47 having ATCC accession no. PTA-3000.

Claim 35. (Previously presented) The method of claim 27, wherein the *Escherichia coli* bacterin strains comprise B41 having ATCC accession number PTA-5951, B42 having ATCC accession number PTA-5952, B44 having ATCC accession number PTA-5954, and B117 having ATCC accession number PTA-5953 and the *Clostridium perfringens* bacterin strain comprises a GL47 having ATCC accession no. PTA-3000.

Claims 36-39. (Cancelled)

Claim 40. (Previously presented) The method of claim 25, 27, 30-35 or 67-78, wherein the vaccine is administered by intramuscular injection.

Claim 41. (Previously presented) The method of claim 25, 27, 30-35 or 67-78, wherein the vaccine is administered by subcutaneous injection.

Claim 42. (Previously presented) The combination vaccine of claim 2, 5, 6, 8-14, 40, 41, or 49-66, wherein the virus is inactivated with an inactivating agent selected from beta-propiolactone, formalin, ethyleneimine derivatives, UV radiation and heat.

Claim 43. (Original) The vaccine of claim 42, wherein said inactivating agent is beta-propiolactone.

Claim 44. (Previously presented) The combination vaccine of claim 2, 5, 6, 8-14, 40, 41, or 49-66 further comprising an adjuvant, wherein the adjuvant is selected from oil based adjuvants, Freund's incomplete, alginate, aluminum hydroxide gel and potassium alum.

Claim 45. (Original) The vaccine of claim 44, wherein the adjuvant is an oil based adjuvant.

Claim 46. (Original) The vaccine of claim 42 or 44, wherein said inactivating agent comprises β-propiolactone and said adjuvant comprises an oil based adjuvant.

Claim 47. (Previously presented) A method of inducing scours immunity in neonatal bovine animals without serious side effect comprising the steps of administering the combination vaccine of claims 2, 5, 6, 8-14 or 49-66 to pregnant cows prior to calving.

Claim 48. (Previously presented) The method of claim 47, further comprising administering a second dose of the combination vaccine of claims 2, 5, 6, 8-14 or 49-66 to pregnant cows prior to calving.

Claim 49. (Previously presented) The combination vaccine of claim 2 wherein said vaccinal bacteria comprises a vaccinal amount of a plurality of *Escherichia coli* bacterin strains.

Claim 50. (Previously presented) The combination vaccine of claim 49, wherein said *Escherichia coli* bacterin strains comprise B41 having ATCC accession number PTA-5951, B42 having ATCC accession number PTA-5952, B44 having ATCC accession number PTA-5954, and B117 having ATCC accession number PTA-5953.

Claim 51. (Previously presented) The combination vaccine of claim 2 wherein said vaccinal bacteria comprises a vaccinal amount of at least one *Clostridium perfringens* Type C bacterin strain.

Claim 52. (Previously presented) The combination vaccine of claim 51, wherein said *Clostridium perfringens* bacterin strain comprises GL47 having ATCC accession no. PTA-3000.

Claim 53. (Previously presented) The combination vaccine of claim 5 wherein said vaccinal bacteria comprises a vaccinal amount of a plurality of *Escherichia coli* bacterin strains.

Claim 54. (Previously presented) The combination vaccine of claim 53, wherein said *Escherichia coli* bacterin strains comprise B41 having ATCC accession number PTA-5951, B42 having ATCC accession number PTA-5952, B44 having ATCC accession number PTA-5954, and B117 having ATCC accession number PTA-5953.

Claim 55. (Previously presented) The combination vaccine of claim 5 wherein said vaccinal bacteria comprises a vaccinal amount of at least one *Clostridium perfringens* Type C bacterin strain.

Claim 56. (Previously presented) The combination vaccine of claim 55, wherein said *Clostridium perfringens* bacterin strain comprises GL47 having ATCC accession no. PTA-3000.

Claim 57. (Currently amended) The combination vaccine of claim 2 wherein said rotavirus strains comprise Cody 81-4 having ATCC accession number PTA-5955, G type10 B223 having ATCC accession number PTA-5956 and B641 having ATCC accession number PTA-5957.

Claim 58. (Previously presented) The combination vaccine of claim 57 wherein said vaccinal bacteria comprises a vaccinal amount of a plurality of *Escherichia coli* bacterin strains.

Claim 59. (Previously presented) The combination vaccine of claim 58, wherein said *Escherichia coli* bacterin strains comprise B41 having ATCC accession number PTA-5951, B42 having ATCC accession number PTA-5952, B44 having ATCC accession number PTA-5954, and B117 having ATCC accession number PTA-5953.

Claim 60. (Previously presented) The combination vaccine of claim 57 wherein said vaccinal bacteria comprises a vaccinal amount of at least one *Clostridium perfringens* Type C bacterin strain.

Claim 61. (Previously presented) The combination vaccine of claim 60, wherein said *Clostridium perfringens* bacterin strain comprises GL47 having ATCC accession no. PTA-3000.

Claim 62. (Previously presented) The combination vaccine of claim 2 wherein said the coronavirus strain comprises the Mebus strain having ATCC accession no. VR-874.

Claim 63. (Previously presented) The combination vaccine of claim 62 wherein said vaccinal bacteria comprises a vaccinal amount of a plurality of *Escherichia coli* bacterin strains.

Claim 64. (Previously presented) The combination vaccine of claim 63, wherein said *Escherichia coli* bacterin strains comprise B41 having ATCC accession number PTA-5951, B42 having ATCC accession number PTA-5952, B44 having ATCC accession number PTA-5954, and B117 having ATCC accession number PTA-5953.

Claim 65. (Previously presented) The combination vaccine of claim 62 wherein said vaccinal bacteria comprises a vaccinal amount of at least one *Clostridium perfringens* Type C bacterin strain.

Claim 66. (Previously presented) The combination vaccine of claim 65, wherein said *Clostridium perfringens* bacterin strain comprises GL47 having ATCC accession no. PTA-3000.

Claim 67. (Previously presented) The method of claim 25, wherein said vaccinal bacteria comprise a vaccinal amount of a plurality of *Escherichia coli* bacterin strains.

Claim 68. (Previously presented) The method of claim 67, wherein said *Escherichia coli* bacterin strains comprise B41 having ATCC accession number PTA-5951, B42 having ATCC accession

number PTA-5952, B44 having ATCC accession number PTA-5954, and B117 having ATCC accession number PTA-5953.

Claim 69. (Previously presented) The method of claim 25, wherein said vaccinal bacteria comprise a vaccinal amount of at least one *Clostridium perfringens* Type C bacterin strain.

Claim 70. (Previously presented) The method of claim 69, wherein said *Clostridium perfringens* bacterin strain comprises GL47 having ATCC accession no. PTA-3000.

Claim 71. (Previously presented) The method of claim 30, wherein said vaccinal bacteria comprise a vaccinal amount of a plurality of *Escherichia coli* bacterin strains.

Claim 72. (Previously presented) The method of claim 71, wherein said *Escherichia coli* bacterin strains comprise B41 having ATCC accession number PTA-5951, B42 having ATCC accession number PTA-5952, B44 having ATCC accession number PTA-5954, and B117 having ATCC accession number PTA-5953.

Claim 73. (Previously presented) The method of claim 30, wherein said vaccinal bacteria comprise a vaccinal amount of at least one *Clostridium perfringens* Type C bacterin strain.

Claim 74. (Previously presented) The method of claim 73, wherein said *Clostridium perfringens* bacterin strain comprises GL47 having ATCC accession no. PTA-3000.

Claim 75. (Previously presented) The method of claim 31, wherein said vaccinal bacteria comprise a vaccinal amount of a plurality of *Escherichia coli* bacterin strains.

Claim 76. (Previously presented) The method of claim 75, wherein said *Escherichia coli* bacterin strains comprise B41 having ATCC accession number PTA-5951, B42 having ATCC accession number PTA-5952, B44 having ATCC accession number PTA-5954, and B117 having ATCC accession number PTA-5953.

Claim 77. (Previously presented) The method of claim 31, wherein said vaccinal bacteria comprise a vaccinal amount of at least one *Clostridium perfringens* Type C bacterin strain.

Claim 78. (Previously presented) The method of claim 77, wherein said *Clostridium perfringens* bacterin strain comprises GL47 having ATCC accession no. PTA-3000.

Claim 79. (Previously presented) The method of claim 32, wherein said vaccinal bacteria comprise a vaccinal amount of a plurality of *Escherichia coli* bacterin strains.

Claim 80. (Previously presented) The method of claim 79, wherein said *Escherichia coli* bacterin strains comprise B41 having ATCC accession number PTA-5951, B42 having ATCC accession

number PTA-5952, B44 having ATCC accession number PTA-5954, and B117 having ATCC accession number PTA-5953.

Claim 81. (Previously presented) The method of claim 32, wherein said vaccinal bacteria comprise a vaccinal amount of at least one *Clostridium perfringens* Type C bacterin strain.

Claim 82. (Previously presented) The method of claim 81, wherein said *Clostridium perfringens* bacterin strain comprises GL47 having ATCC accession no. PTA-3000.